



College : **ENGINEERING**  
 Department : **CIVIL AND ARCHITECTURAL ENGINEERING**  
 Cohorts : **2022**  
 Degree : **B. ENG.**  
 Major Specialization : **CIVIL ENGINEERING**



<b>Summary of Credits:</b>		
<b>University Requirements (UR)</b>		<b>6</b>
General Foundation Program	NC*	
Arabic	2	
Contemporary Omani State and People	2	
Oman & Islamic Civilization or Islamic Culture	2	
<b>University Electives (UE)</b>		<b>6</b>
See List A		
<b>College Requirements (CR)</b>		<b>32</b>
See list B		
<b>College Electives (CE)</b>		<b>3</b>
See list C		
<b>Departmental Requirements (DR)</b>		<b>43</b>
See list D		
<b>Departmental Electives (DE)</b>		<b>0</b>
See list E		
<b>Major Requirements (AR)</b>		<b>31</b>
See list F		
<b>Major Electives (AE)</b>		<b>15</b>
See list G		
<b>Minor Requirements (IR)</b>		<b>0</b>
See list H		
<b>Minor Electives (IE)</b>		<b>0</b>
See list I		
<b>Specialization Requirements (SR)</b>		<b>0</b>
See list J		
<b>Specialization Electives (SE)</b>		<b>0</b>
See list K		
<b>TOTAL</b>		<b>136</b>

\* Not Credited

For reference contact: HoD  
 HoD (Acting Hod)  
 Dean's Office  
 Admission and Registration



Ext. 1332  
 Date: 14/03/2024  
 Date: 20/03/2024  
 Date:

**Last update on: 14/03/2024**

**Department of Civil and Architectural Engineering**  
**Civil Engineering Degree Plan: 2022 Cohort (Scheme I)**

Scheme I FP1 (Fall 2022)	Course Code	Course Title	Cr.	Pre-req.	Cat.
		General Foundation Program	0		UR
	<b>Total</b>		<b>0</b>		

Scheme I Semester 1 (Spring 2023)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	HIST1010 ISLM1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	CHEM1071	General Chemistry for Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0108 or 0109)	CR
	ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0108 or 0109)	CR
	<b>Total</b>		<b>14</b>		

Scheme I Semester 2 (Fall 2023)	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
	ARAB1060 <sup>+</sup>	Arabic	2		UR
		University Elective I	2		UE
	SOCY1005 <sup>+</sup>	Contemporary Omani State and People	2		UR
	LANC2161	English for Engineering II	3	LANC2160	CR
	MATH2109	Calculus II for Science and Engineering	3	MATH 2107	CR
	PHYS2107	Physics for Engineering I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0108 or 0109), MATH2107* (Co-req.)	CR
	<b>Total</b>		<b>16</b>		

Scheme I Semester 3 (Spring 2024)	Course Code	Course Title	Cr.	Pre-req.	Cat.
		College Elective	3		CE
	PHYS2108	Physics for Engineering II	4	PHYS 2107	CR
	ERSC2020	Geology for Engineers	3		DR
		University Elective II	2		UE
	CIVL3011	Statics	3	PHYS2107	DR
	<b>Total</b>		<b>15</b>		

<sup>+</sup>For non-Omani and non-Arabic speaking students, refer to Appendix A.

Scheme I Semester 4 (Fall 2024)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	MATH3171	Linear Algebra & Multivariate Calculus	3	MATH2109, LANC2161	CR
	CIVL3002	Drawing I	2		DR
	CIVL3056	Surveying	3	MATH2107	DR
	CIVL3086	Mechanics of Materials	3	CIVL3011	DR
	CIVL3096	Construction Materials	3	CIVL3011, CHEM1071	DR
	CIVL4006	Prob. & Statistics for Engineers	3	MATH2107	DR
	<b>Total</b>		<b>17</b>		

Scheme I Jan. 2025	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL3007	Practical Skills Development	0	CIVL3056	DR
	<b>Total</b>		<b>0</b>		

Scheme I Semester 5 (Spring 2025)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	MATH4174	Differential Equations for Engineers	3	MATH2109, LANC2161	CR
	CIVL3036	Structures I	3	CIVL3086	DR
	CIVL3046	Drawing II	2	CIVL3002	AR
	CIVL3076	Transportation Engineering	3		AR
	CIVL3106	Geotechnical Engineering I	3	PETM3006 or ERSC2020	AR
	CIVL4046	Fluid Mechanics	3	CIVL3011	DR
	<b>Total</b>		<b>17</b>		

Scheme I Semester 6 (Fall 2025)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL4036	Highway Engineering	3	CIVL3106, CIVL3076	AR
	CIVL4136	Environmental Engineering I	3	CIVL4046, CHEM1071	AR
	CIVL4146	Hydraulics	3	CIVL4046	AR
	CIVL4206	Concrete Design	3	CIVL3036, CIVL3096, (CIVL3046 or AREN3312)	DR
	CIVL5146	Numerical Methods	3	ENGR2217/COMP2002), MATH3171	DR
	<b>Total</b>		<b>15</b>		

Scheme I Semester 7 (Spring 2026)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL4400	Professional Practice & Ethics	2		DR
		Department Elective I <sup>b</sup>	3		AE
	CIVL3066	Engineering Hydrology	3	CIVL4046	AR
	CIVL4016	Structures II	3	CIVL3036, MATH 4174	AR
	CIVL5204	Engineering Economics	3	MATH2107	DR
	<b>Total</b>		<b>14</b>		

Scheme I Summer 2026	<b>Course Code</b>	<b>Course Title</b>	<b>Cr.</b>	<b>Pre-req.</b>	<b>Cat.</b>
	ENGR4007	Industrial Training	0		CR
	<b>Total</b>		<b>0</b>		

Scheme I Semester 8 (Fall 2026)	<b>Course Code</b>	<b>Course Title</b>	<b>Cr.</b>	<b>Pre-req.</b>	<b>Cat.</b>
		Department Elective II <sup>b</sup> <b>or</b>			AE
	CIVL5993	Research Project I	3	Department Approval	
	CIVL4216	Steelwork Design	3	CIVL3036, (CIVL3046 or AREN3312), PHYS2108	DR
	CIVL4226	Foundation Engineering	3	CIVL3106, CIVL4206	AR
	CIVL5336	Construction Management	3	CIVL5204	DR
	CIVL5991	Design Project I	2	CIVL4206 and (CIVL4036, CIVL4136 or CIVL4146)	AR
	<b>Total</b>		<b>14</b>		

Scheme I Semester 9 (Spring 2027)	Course Code	Course Title	Cr.	Pre-req.	Cat.
		University Elective III	2		UE
		Department Elective III <sup>b</sup>	3		AE
		Department Elective IV <sup>b</sup>	3		AE
		Department Elective V <sup>b</sup> <b>or</b>			AE
	CIVL5994	Research Project II	3	CIVL5993	
	CIVL5992	Design Project II	3	CIVL5991	AR
	Total			14	
Total (All Program)			136		

<sup>b</sup> Departmental Electives: A student must choose five department elective courses.  
The student who successfully completed CIVL5993 must also take CIVL5994.

**Department of Civil and Architectural Engineering**  
**Civil Engineering Degree Plan: 2022 Cohort (Scheme II)**

Scheme II FP1 (Fall 2022)	Course Code	Course Title	Cr.	Pre-req.	Cat.
		General Foundation Program	0		UR
	<b>Total</b>		<b>0</b>		

Scheme II FP2 (Spring 2023)	Course Code	Course Title	Cr.	Pre-req.	Cat.
		General Foundation Program	0		UR
	<b>Total</b>		<b>0</b>		

Scheme II Semester 1 (Fall 2023)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	HIST1010 ISLM1010	Oman & Islamic Civilization <b>or</b> Islamic Culture	2		UR
	LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	CHEM1071	General Chemistry for Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0108 or 0109)	CR
	ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0108 or 0109)	CR
	<b>Total</b>		<b>14</b>		

Scheme II Semester 2 (Spring 2024)	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
	ARAB1060 <sup>+</sup>	Arabic	2		UR
		University Elective I	2		UE
	LANC2161	English for Engineering II	3	LANC 2160	CR
	SOCY1005 <sup>+</sup>	Contemporary Omani State and People	2		UR
	MATH2109	Calculus II for Science and Engineering	3	MATH2107	CR
	PHYS2107	Physics for Engineering I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0108 or 0109), MATH2107* (Co-req.)	CR
	<b>Total</b>		<b>16</b>		

<sup>+</sup>For non-Omani and non-Arabic speaking students, refer to Appendix A.

Scheme II Summer 2024	Course Code	Course Title	Cr.	Pre-req.	Cat.
		College Elective	3		CE
	CIVL3011	Statics	3	PHYS2107	DR
	<b>Total</b>		<b>6</b>		

Scheme II Semester 3 (Fall 2024)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	ERSC2020	Geology for Engineers	3		DR
	PHYS2108	Physics for Engineering II	4	PHYS2107	CR
		University Elective II	2		UE
	CIVL3002	Drawing I	2		DR
	CIVL3056	Surveying	3	MATH2107	DR
	CIVL3086	Mechanics of Materials	3	CIVL3011	DR
	<b>Total</b>		<b>17</b>		

Scheme II January 2025	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL3007	Practical Skills Development	0	CIVL3056	DR
	<b>Total</b>		<b>0</b>		

Scheme II Semester 4 (Spring 2025)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL3046	Drawing II	2	CIVL3002	AR
	CIVL3076	Transportation Engineering	3		AR
	CIVL3096	Construction Materials	3	CIVL3011, CHEM1071	DR
	CIVL3106	Geotechnical Engineering I	3	PETM3006 or ERSC2020	AR
	CIVL4046	Fluid Mechanics	3	CIVL3011	DR
	MATH3171	Linear Algebra & Multivariate Calculus	3	MATH2109, LANC2161	CR
	<b>Total</b>		<b>17</b>		

Scheme II Summer 2025	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL4006	Prob. & Statistics for Engineers	3	MATH2107	DR
	CIVL5204	Engineering Economics	3	MATH2107	DR
	<b>Total</b>		<b>6</b>		

Scheme II Semester 5 (Fall 2025)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	MATH4174	Differential Equations for Engineers	3	MATH2109, LANC2161	CR
	CIVL3036	Structures I	3	CIVL3086	DR
	CIVL4036	Highway Engineering	3	CIVL3106, CIVL3076	AR
	CIVL4136	Environmental Engineering I	3	CIVL4046, CHEM1071	AR
	CIVL4146	Hydraulics	3	CIVL4046	AR
	<b>Total</b>		<b>15</b>		

Scheme II Semester 6 (Spring 2026)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL4400	Professional Practice & Ethics	2		DR
		Department Elective I <sup>b</sup>	3		AE
	CIVL3066	Engineering Hydrology	3	CIVL4046	AR
	CIVL4016	Structures II	3	CIVL3036, MATH 4174	AR
	CIVL4206	Concrete Design	3	CIVL3036, CIVL3096, (CIVL3046 or AREN3312)	DR
	CIVL5146	Numerical Methods	3	ENGR2217/COMP2002), MATH 3171	DR
	<b>Total</b>		<b>17</b>		

Scheme II Summer 2026	Course Code	Course Title	Cr.	Pre-req.	Cat.
	ENGR4007	Industrial Training	0		
	<b>Total</b>		<b>0</b>		

Scheme II Semester 7 (Fall 2026)	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL5993	Department Elective II <sup>b</sup> or Research Project I	3	Department Approval	AE
	CIVL4216	Steelwork Design	3	CIVL3036, (CIVL3046 or AREN3312), PHYS 2108	DR
	CIVL4226	Foundation Engineering	3	CIVL3106, CIVL4206	AR
	CIVL5336	Construction Management	3	CIVL5204	DR
	CIVL5991	Design Project I	2	CIVL4206 and (CIVL4036, CIVL4136 or CIVL4146)	AR
	<b>Total</b>		<b>14</b>		

Scheme II Semester 8 (Spring 2027)	Course Code	Course Title	Cr.	Pre-req.	Cat.
		University Elective III	2		UE
		Department Elective III <sup>b</sup>	3		AE
		Department Elective IV <sup>b</sup>	3		AE
	CIVL5994	Department Elective V <sup>b</sup> or Research Project II	3	CIVL5993	AE
	CIVL5992	Design Project II	3	CIVL5991	AR
	<b>Total</b>		<b>14</b>		
	<b>Total (All Program)</b>		<b>136</b>		

<sup>b</sup> Departmental Electives: A student must choose five department elective courses.  
The student who successfully completed CIVL5993 must also take CIVL5994.

## Department of Civil and Architectural Engineering

### Civil Engineering Degree Plan: 2022 Cohort (COOP Scheme)

- The cooperative Training (COOP) Scheme is **optional**.
- **Scheme I** Students can enroll in this scheme starting from Semester **8** after the foundation program.
- **Scheme II** students can enroll in this scheme starting from Semester **7** after the foundation program.
- For enrollment terms, conditions, and registration procedure, please consult the Head of Department and the Assistant Dean for Training and Community Services Offices.

COOP Scheme COOP Semester	Course Code	Course Title	Cr.	Pre-req.	Cat.
	ENGR4007	Industrial Training	0		CR
	CIVL5001	Civil Program Cooperative Training I	0	ENGR4007* (Co-req.)	AE
	<b>Total</b>		<b>0</b>		

COOP Scheme COOP Semester	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL5002	Civil Program Cooperative Training II	6	CIVL5001	AE
	<b>Total</b>		<b>6</b>		

COOP Scheme COOP Semester	Course Code	Course Title	Cr.	Pre-req.	Cat.
	CIVL5993	Department Elective II <sup>b</sup> or Research Project I	3	Department Approval	AE
	CIVL4226	Foundation Engineering	3	CIVL3106, CIVL4206	AR
	CIVL5336	Construction Management	3	CIVL5204	DR
	CIVL5991	Design Project I	2	CIVL4206 and (CIVL4036, CIVL4136 or CIVL4146)	AR
	<b>Total</b>		<b>11</b>		

COOP Scheme COOP Semester	Course Code	Course Title	Cr.	Pre-req.	Cat.
		University Elective III	2		UE
	CIVL4216	Steelwork Design	3	CIVL3036, (CIVL3046 or AREN3312), PHYS2108	DR
	CIVL5994	Department Elective III <sup>b</sup> or Research Project II	3	CIVL5993	AE
	CIVL5992	Design Project II	3	CIVL5991	AR
	Total		11		
	Total (All Program)		136		

<sup>b</sup> Departmental Electives: A student must choose three department elective courses. The student who successfully completed CIVL5993 must also take CIVL5994.



## **Appendix A**

No.	Cohorts 2018 and before	Credits	Cohorts 2018 and after	Cr.	Notes
1	ARAB1001	3	ARAB1060	2	
2	SOCY1001	1	SOCY1005	2	For Omanis Only
3	--	--	SOCY1007	2	For Non Omanis
4	ARAB1019			3	For Non-Arabic Speaking Students. Offered only in Fall semesters

### **Notes:**

- For the courses (SOCY1005, SOCY1007, HIST1010), the course materials and exams are in English for non-Arabic speaking students.
- Currently, there is no Arabic course with 2 credits for the non-Arabic speaking students of cohorts 2018 and after. Those students have to register the ARAB1019 as shown in the table above.

**Department of Civil and Architectural Engineering****Civil Engineering Degree Plan: 2022 Cohort****LIST A\* – UNIVERSITY ELECTIVES**

<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>	<b>College</b>
ARAB1040	Literature and Sociology	2	Arts
ARAB1050	Language and Sociology	2	Arts
ARCH1170	Development Civilization in Oman	2	Arts
ARCH1180	Archhaeology and Environment in Oman	2	Arts
ARCH1520	Arch in Ancient Oman	2	Arts
ARCH1525	Arch Style Arab Gulf	2	Arts
ARCH1526	Islamic Arch	2	Arts
ARCH1530	Oman Arch Through Ages	2	Arts
ARCH1531	Hist Animals in Oman	2	Arts
ARCH1535	Oman Town Culture Rem	2	Arts
ARCH1536	Arch. Know Arab Peninsulum	2	Arts
ARCH1537	Cult. Development Arab Gulf	2	Arts
ARCH1538	Oral History Cult. Heritage	2	Arts
ARCH1539	Hist. Ethn Jewwl. Oman	2	Arts
ARCH1540	Natural Culture Heritage Oman	2	Arts
ARCH1541	Cult. Scent and Arom. Oman	2	Arts
ARCH1550	Devl. Art Arch. Oman	2	Arts
ARCH1551	Admin. Arch. Heritage	2	Arts
ARCH5500	Sea Port and Mart. Arch	2	Arts
ARED1001	Contemporary Visual Arts	2	Education
ARED1002	Appreciation of Islamic Arts and Arabic	2	Education
BCOM1950	Varieties of Public and Professional Communication	3	Commerce
BCOM1960	Cross-Cultural Communication	2	Commerce
BIOL1003	Genetics in our Life	2	Science
BIOL1004	Environment Issues	2	Science
CUTM1002	Environmental Education	2	Education
CUTM1003	Principles of Teaching	2	Education
GEOG2021	Man and Natur. Env. In Oman	2	Arts
GEOG2031	Urbanization in the Arabian Gulf	2	Arts
GEOG2122	Man and Environment	2	Arts
GEOG2341	Dev. Countries	2	Arts
HIST1030	History of the GCC Countries	2	Arts
HIST1040	Some Aspects of the History of Oman	2	Arts
INFO4100	Children's Literature	2	Arts

ISLM1020	Human Right in Islam	2	Education
ISLM2010	Prophet Biog. Environment	2	Education
ISLM2030	The Miracle of the Holy Quran	2	Education
ISLM2040	Islamic Economy	2	Education
ISLM2060	Family Systems in Islam	2	Education
ISLM2070	Quranic Stories	2	Education
ISLM2080	General Aims	2	Education
ISLM2090	Islamic Ethics	2	Education
ISLM2150	Islam and the Modern World	2	Education
MASS1020	Arts of Media Edit	2	Arts
MASS1030	Public Opinion (UE)	2	Arts
MASS1060	Mass Media and Society	2	Arts
MASS1070	International Comm	2	Arts
MASS1080	Principles of Public Relations (UE)	2	Arts
NURS1004	First Aid	2	Nursing
NURS1005	Physical & Psychological Child Health	2	Nursing
PHED1000	Physical Fitness	2	Education
PHIL2050	International Meth	2	Arts
PHIL2060	Ethics	2	Arts
PHIL2070	Tren. Cont. Phi. Though	2	Arts
PHIL2213	Science in Arab Through	2	Arts
PSYC1001	Human Behavior	2	Education
PSYC1002	Psych/Human Problems	2	Education
SOCI2151	Medical Sociology	2	Arts
SOCI2361	Introduction to Social Work	2	Arts
THAR1001	Theater Appreciation	2	Arts
THAR1003	Music Appreciation	2	Arts
THAR1012	Play Writing	2	Arts
THAR1013	Oratory/Presentation	2	Arts
THAR1014	Scholastic Theater	2	Arts
THAR1016	Child's Theater	2	Arts
THAR1017	Theater Scenography	2	Arts
TOUR1050	Tourism in Oman	2	Arts

\* University elective must be non-science and non-linguistic course. Any humanity and social course not listed above cannot be accepted as university elective.

**Department of Civil and Architectural Engineering**

**Civil Engineering Degree Plan: 2022 Cohort**

**LIST B: College REQUIREMENTS (CR)**

Code	Title	Credits	Pre-Requisite
ENGR1501	Introduction to Engineering	1	
ENGR1600	Workshop I	1	
LANC2160	English for Engineering I	3	
LANC2161	English for Engineering I	3	LANC2160
MATH2107	Calculus I	4	
MATH2109	Calculus II for Science and Engineering	3	MATH 2107
MATH3171	Linear Algebra & Multivariate Calculus	3	MATH2109, LANC2161
MATH4174	Differential Equations for Engineers	3	MATH2109, LANC2161
PHYS2107	Physics for Engineering I	4	MATH2107* (Co-req.)
PHYS2108	Physics for Engineering II	4	PHYS 2107
CHEM1071	General Chemistry for Engineers	3	
ENGR4007	Industrial Training	0	
<b>Total</b>		<b>32</b>	

**Department of Civil and Architectural Engineering**

**Civil Engineering Degree Plan: 2022 Cohort**

**LIST C: College Electives (CE)**

**One Course- 3 credit hours:** The elective course will be offered from the following courses subject to availability.

Code	Title	Credits	Pre-Requisite
COMP 2002	Introduction to Comp. Programming for Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS(0101 or 0102)
ENGR2217	Computer Programming	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS(0101 or 0102)

**Department of Civil and Architectural Engineering**  
**Civil Engineering Degree Plan: 2022 Cohort**  
**LIST D: Department Requirement (DR)**

Code	Title	Credits	Pre-Requisite
CIVL3011	Statics	3	PHYS2107
CIVL3002	Drawing I	2	
CIVL3056	Surveying	3	MATH2107
CIVL3086	Mechanics of Materials	3	CIVL3011
CIVL3096	Construction Materials	3	CIVL3011, CHEM1071
ERSC2020	Geology for Engineers	3	
CIVL3036	Structures I	3	CIVL3086
CIVL4006	Prob. & Statistics for Engineers	3	MATH2107
CIVL4046	Fluid Mechanics	3	CIVL3011
CIVL4206	Concrete Design	3	CIVL3036, CIVL3096, (CIVL3046 or AREN3312)
CIVL4400	Professional Practice & Ethics	2	
CIVL5146	Numerical Methods	3	(ENGR2217/COMP2002), MATH 3171
CIVL5204	Engineering Economics	3	MATH2107
CIVL4216	Steelwork Design	3	CIVL3036, (CIVL3046 or AREN3312), PHYS2108
CIVL5336	Construction Management	3	CIVL5204
CIVL3007	Practical Skills Development	0	CIVL3056
<b>Total</b>		<b>43</b>	

**Department of Civil and Architectural Engineering**  
**Civil Engineering Degree Plan: 2022 Cohort**  
**LIST F: MAJOR Requirements (AR)**

Code	Title	Credits	Pre-Requisite
CIVL3046	Drawing II	2	CIVL3002
CIVL3106	Geotechnical Engineering I	3	PETM3006 or ERSC2020
CIVL4036	Highway Engineering	3	CIVL3106, CIVL3076
CIVL3076	Transportation Engineering	3	
CIVL4136	Environmental Engineering I	3	CIVL4046, CHEM1071
CIVL4146	Hydraulics	3	CIVL4046
CIVL3066	Engineering Hydrology	3	CIVL4046
CIVL4016	Structures II	3	CIVL3036, MATH4174
CIVL4226	Foundation Engineering	3	CIVL3106, CIVL4206
CIVL5991	Design Project I	2	CIVL4206 and (CIVL4036, CIVL4136 or CIVL4146)
CIVL5992	Design Project II	3	CIVL5991
<b>Total</b>		<b>31</b>	

**Department of Civil and Architectural Engineering**  
**Civil Engineering Degree Plan: 2022 Cohort**  
**LIST G: MAJOR electives (AE)**  
**Civil Engineering Electives**

**Technical Elective Courses – 15 credit hours**

The student should select 5 courses (15 credit hours) or 3 courses (9 credit hours) and Research Project I and Research Project II. The electives can be taken from: (1) Civil Engineering optional technical electives; or (2) one course (max. 3 credits) offered in the M.Sc. Program in Civil Engineering after approval of advisor.

**Civil Engineering: General**

Code	Title	Credits	Pre-Requisite
CIVL5104	Special Topics in Civil Engineering	3	Department Council Approval
CIVL5150	Remote Sensing	3	
CIVL5376	Conservation of Structures	3	
CIVL5993	Research Project I	3	Department Council Approval
CIVL5994	Research Project II	3	CIVL5993

**Civil Engineering: Water Resources**

Code	Title	Credits	Pre-Requisite
CIVL5076	Coastal Engineering	3	CIVL4146
CIVL5142	Groundwater	3	CIVL3066
CIVL5246	Hydraulic Structures	3	CIVL4146
CIVL5346	Water Resources Engineering	3	CIVL3066, CIVL4046
CIVL5160	GIS in Water Resources Engineering	3	CIVL3066

**Civil Engineering: Geotechnical**

Code	Title	Credits	Pre-Requisite
CIVL4106	Geotechnical Engineering II	3	CIVL3106
CIVL5106	Slope Stability	3	CIVL3106
CIVL5132	Environmental Geotechnics	3	CIVL3106
CIVL5133	Soil Improvement	3	CIVL3106

**Civil Engineering: Transportation**

Code	Title	Credits	Pre-Requisite
CIVL5122	Highway Materials	3	CIVL4036
CIVL5206	Traffic Engineering	3	CIVL3076
CIVL5216	Pavement Design and Maintenance	3	CIVL4036
CIVL5226	Airport Design	3	CIVL4036

**Civil Engineering: Structures**

Code	Title	Credits	Pre-Requisite
CIVL5096	Concrete Structures	3	CIVL4016, CIVL4206
CIVL5126	Concrete Materials and Technology	3	CIVL3036, CIVL3086, CIVL3096
CIVL5214	Computer Applications in Structural Engineering	3	CIVL4016, CIVL4206
CIVL5236	Prestressed Concrete	3	CIVL4206
CIVL5296	Design of Masonry Structures	3	CIVL3086
CIVL5270	Fire Safety in Buildings	3	CIVL4216
CIVL5462	Concrete Technology	3	CIVL3096
CIVL5662	Building Materials	3	CIVL3086, CIVL3096

**Civil Engineering: Construction**

Code	Title	Credits	Pre-Requisite
CIVL5102	Construction Engineering	3	
CIVL5156	Estimating Construction Cost	3	CIVL3046, CIVL4206
CIVL5306	Specifications and Contracts	3	CIVL4206
CIVL5678	Administration of Contracts	3	CIVL4206
CIVL5680	Construction Planning & Scheduling (Computer application)	3	CIVL4206

**Civil Engineering: Environmental**

Code	Title	Credits	Pre-Requisite
CIVL5151	Solid Waste Management	3	CIVL5326
CIVL5152	Microbiology for Engineers	3	CIVL4136
CIVL5153	Chemistry for Environmental Engineering	3	CIVL4136
CIVL5186	Water and Wastewater Management	3	CIVL4136
CIVL5254	Environmental Pollution	3	CIVL5326
CIVL5255	Environmental Management Systems	3	CIVL5326
CIVL5326	Environmental Engineering II	3	CIVL4136
CIVL5154	Membrane Technology for water and wastewater	3	CIVL4136

**Civil Engineering: Geomatics**

Code	Title	Credits	Pre-Requisite
CIVL5111	Global Positioning Systems and Its Applications in Civil Engineering	3	CIVL3056
CIVL5311	Adjustment Computations	3	CIVL3056
CIVL5600	Introduction to Photogrammetry	3	CIVL3056